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AUTHOR Dretzke, Beverly J.; Keniston, Allen H.
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ABSTRACT

A study examined the relation between individual differences in reading behavior and achievement in college students. Subjects, 197 students enrolled in four undergraduate psychology courses at a midwestern university, completed questionnaires concerning their reading strategies, attitudes toward reading, and personal background information. Responses to the strategy and attitude items on the questionnaire were submitted to factor analysis. Results indicated that a distinct set of factors, which replicated the factors identified by G. E. Rice and B. J. F. Meyer in their 1986 study, was generated: (1) enjoyment of reading; (2) summarizing strategy; (3) detail rehearsal strategy; (4) relating strategy; and (5) main idea strategy. Results also indicated that enjoyment of reading, summarizing strategy, and main idea strategy were positively correlated with course grades. Findings suggest that the survey instrument would be a valuable diagnostic tool to recommend reading strategies for students who are doing poorly in their course work. (Three tables of data are included.) (RS)

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The Relation Between College Students' Reading Strategies, Attitudes, and Course Performance

Beverly J. Dretzke

and

Allen H. Keniston

University of Wisconsin-Eau Claire

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Abstract

Responses obtained from a reading strategies/attitude questionnaire completed by college students were submitted to factor analysis. Five factors emerged which were related to four qualitatively different reading strategies and an attitude component. Three of these five factors were found to be significantly correlated with course grades.

The Relation Between College Students' Reading Strategies, Attitudes, and Course Performance

Educational psychologists have recently started to focus attention on the identification of study strategies that will enhance students' performance in various types of learning situations (Rohwer, 1984). For example, in his review of learning tactics and strategies, Snowman (1986) discusses the benefits to be derived from activities such as underlining, summarizing, questioning, and the use of mnemonic devices. Nearly all of the studies cited by Snowman, however, were laboratory research experiments which employed word lists, sentences, or short passages to assess strategy effectiveness. An exception is a study recently reported by Leal (1987) in which college students' course examination performance was found to be significantly related to their knowledge of memory strategies and the study plans they formulated for hypothetical paired associate and free-recall learning tasks. More studies of this type are needed to help us determine which study strategies are related to enhanced performance in real-world learning situations.

One of the main activities that college students engage in is reading. Despite heavy reliance on reading as a means of communicating course content, we know relatively little about how individual differences in reading behaviors may be related to achievement. Rice and Meyer (1986) developed a questionnaire on reading strategies which was designed to study reading behaviors among elderly subjects engaging in prose recall tasks. Factor analysis of the questionnaire responses indicated the presence of several distinct recall strategies. Three of these (paragraph strategy, detail strategy, and main idea strategy) accounted for 10 percent of the variance in a measure of total recall. The factors

identified by Rice and Meyer appear to be very robust and explained comparable amounts of variance (i.e., 10 to 13 percent each). Therefore, their questionnaire was adapted for use in the present study in order to explore the relation between self-reported strategies applied while reading course materials and student performance in undergraduate psychology classes. One of our goals was to determine whether the factor structure would replicate. If it did, we could pursue the possibility that Rice and Meyer have developed an instrument that could be used in both theoretical and applied studies of the influence of reading strategies on recall performance.

Method

The participants in this study were 197 students enrolled in four undergraduate psychology courses at a midwestern university. These included two sections of general psychology (one of which was an honors section), two sections of educational psychology, and one section of adolescent psychology. These courses comprised approximately two thirds of the teaching loads of the two authors.

The questionnaire developed by Rice and Meyer (1986) was revised for use in the present study. Rather than referring to a specific recall task as they did, here respondents answered questions about strategies they generally employed while reading course materials, their attitudes about reading, and personal background information. The items relating to the paragraph strategy were omitted since they pertained specifically to the order in which subjects attempted to write down passage information from memory. The questionnaires were completed during the last class meeting in the semester.

Responses to the strategy and attitude items on the questionnaire were submitted to factor analysis. The obtained factor weights were applied to the students' responses and weighted scores were correlated with course grades.

Course grades were based on tests, paper assignments, and a variety of short assignments completed in and out of class. In most cases, the tests utilized a multiple-choice format, although the honors general psychology students and educational psychology students also responded to short-answer and essay questions. The final measure used for the correlational analyses in this study was the percentage of points accumulated from all assignments and tests.

Results

The factor analysis generated five factors which accounted for 61.3 percent of the total variance (see Table 1). Factor 1 (17.0%) was defined by the items that asked whether subjects memorized numbers and facts, concentrated on details, and repeated details to self. Factor 2 (14.5%) was comprised of four items regarding how much they enjoy reading, how often they read, whether they consider themselves good readers, and if they argue back when they disagree with an author. Factor 3 (12.3%) was made up of the strategies of relating reading to what they already know, thinking of examples, and creating images. Factor 4 (10.1%) was defined by identifying important points after reading, outlining, and summarizing. Finally, factor 5 (7.4%) included two items regarding identifying important points--identifying important points in general, and identifying important points during reading. The pattern of item loadings on the factors suggested the following labels for the five factors: detail rehearsal strategy, enjoyment of reading, relating strategy, summarizing strategy, and main idea strategy.

Zero-order correlations were calculated between course grades and scores on all five factors (see Table 2). Three of these were significant at the .05 level or better. These were enjoyment of reading, summarizing

Table 1

Factor Loadings for Reading Behaviors (Rotated and Sorted)

	Factor 1 Detail Rehearsal Strategy	Factor 2 Enjoyment of Reading	Factor 3 Relating Strategy	Factor 4 Summarizing Strategy	Factor 5 Main Idea Strategy
1. Memorize NUMBERS and FACTS	.798	--[a]	--	--	--
2. Concentrate on NUMBERS and FACTS	.838	--	--	--	--
3. Repeat NUMBERS and FACTS to self	.865	--	--	--	--
4. Reading is ENJOYABLE	--	.748	--	--	--
5. Read OFTEN	--	.785	--	--	--
6. Consider self a GOOD READER	--	.776	--	--	--
7. ARGUE BACK if disagree	--	.519	--	--	--
8. RELATE reading to what is already known	--	--	.771	--	--
9. Think of EXAMPLES relevant to reading	--	--	.773	--	--
10. Make IMAGES in mind	--	--	.601	--	--
11. Identify IMPORTANT POINTS after reading	--	--	--	.697	--
12. OUTLINE reading in mind	--	--	--	.719	--
13. SUMMARIZE during reading	--	--	--	.645	--
14. Identify IMPORTANT POINTS in general	--	--	--	--	.807
15. Identify IMPORTANT POINTS during reading	--	--	--	--	.865
Eigenvalue	2.556	2.169	1.849	1.521	1.106
Variance Explained	17.0%	14.5%	12.3%	10.1%	7.4%

[a]Denotes a loading of less than .250

Table 2

Zero-Order Correlations Between Factors and Course Grade

		r
1.	Detail Rehearsal Strategy	.000
2.	Enjoyment of Reading	.234**
3.	Relating Strategy	-.070
4.	Summarizing Strategy	.158*
5.	Main Idea Strategy	.148*

*$p < .05$
**$p < .002$

Table 3

Increments in R^2 for Stepwise Regression on Course Grade

Order of Entry	F	
Enjoyment of Reading	11.306	.055*
Summarizing Strategy	8.240	.023*
Main Idea Strategy	7.178	.022*
Total R^2		.100

*$p < .001$

strategy, and main idea strategy. These same three factors made significant contributions to predicting course grades in a stepwise multiple regression analysis. Together these accounted for 10 percent of the variance in overall grades (see Table 3).

Discussion

Our strongest finding clearly is the generation of a distinct set of factors which replicated the factors identified by Rice and Meyer (1986). Their comparable factors were labeled: read lots and like it, outline strategy, detail strategy, relating strategy, and main idea strategy. The replication of the Rice and Meyer factor structure is especially remarkable since they had their elderly subjects describe strategies used in a prose recall task they had just completed, whereas we had undergraduates describe generalized reading habits employed throughout the semester. The discovery of comparable factors from different research approaches attests to the robustness of these factors. Our conclusion is that students can reliably describe real and distinguishable features of their reading behavior.

Our work also appears to replicate independent findings from work on the Learning and Studies Strategies Inventory (LASSI) reported by Weinstein, Zimmermann, and Palmer (1988). For example, the LASSI contains an attitude scale and a selecting main ideas scale--both of which appeared on our questionnaire. In addition, one of their scales, information processing, appears to be related to two of our factors--the relating strategy and the summarizing strategy.

Although our findings from the regression analysis yielded a small percentage of variance accounted for, we nevertheless are encouraged the by the finding of any significant correlation at all given the nature

of our dependent measure. Our summary measure of performance included assignments that do not rely heavily on memory for text material, such as papers and other written assignments. This finding encourages us to plan future work in which we study the relationship between responses on this instrument and scores on tasks that rely more heavily on text processing and prose recall.

Pending replication of these findings in situations that are more controlled, we tentatively suggest that our adaptation of Rice and Meyer could be effectively used as a diagnostic tool to enhance our ability to recommend reading strategies to students who are doing poorly in their course work. We believe that it would be a valuable diagnostic tool since the comparative brevity of the instrument (15 items) makes it especially attractive.

Before extensive use of this instrument is made, however, several issues need to be clarified. One suggested by McKeachie (1988) is the issue of whether better students use more effective strategies or if it is their enhanced knowledge status that enables them to make effective use of more sophisticated strategies. To come to a clearer understanding of study strategy use, these and other alternative hypotheses should be investigated in controlled experiments that manipulate strategy use and knowledge.

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